**What is claimed is:**

1. An optical attenuator which adjusts transmission amount of an optical signal inputted through an optical signal transmission line and outputs the optical signal, comprising:

a silicon layer provided with a waveguide for transmitting the optical signal from the optical signal transmission line and an activator formed at a predetermined portion thereof;

a bonding medium layer provided with a cavity into which the waveguide is inserted, the bonding medium layer being bonded at a waveguide-formed face of the silicon layer; and

a support layer attached to the bonding medium layer at an opposite face to a face where the bonding medium layer is bonded with a silicon substrate.

2. The optical attenuator according to claim 1, wherein the bonding medium layer is formed of a polymer having a high light transmission.

3. The optical attenuator according to claim 2, wherein the bonding medium layer is formed of polydimethylsiloxane (PDMS).

4. The optical attenuator according to claim 1, wherein the support layer is made of glass.

5. The optical attenuator according to claim 1, wherein the cavity into which the waveguide is inserted has a width and a depth substantially same as those of the waveguide.

6. The optical attenuator according to claim 1, wherein the actuator formed in the silicon layer is a microelectromechanical system (MEMS) actuator which is movable in a horizontal direction depending on an application of a voltage.

7. The optical attenuator according to claim 6, wherein the MEMS actuator is a comb type actuator.

8. A method for manufacturing an optical attenuator, the method comprising the steps of:

forming a photosensitive structure on an auxiliary substrate, the photosensitive structure having a size substantially same as that of a waveguide connected with an optical signal transmission line,;

forming a bonding medium layer on the auxiliary substrate so as to cover the photosensitive structure;

separating the auxiliary substrate from the bonding medium layer to form a cavity in the bonding medium layer;

attaching a support layer on an opposite face to a cavity-formed face of the separated bonding medium layer;

preparing a silicon substrate provided at a predetermined surface thereof with a waveguide connected with the optical signal transmission line;

bonding the silicon substrate and the bonding medium layer to each other such that the waveguide of the silicon substrate is inserted into the cavity of the bonding medium layer; and

forming an actuator on the silicon substrate.

9. The method according to claim 8, wherein the bonding medium layer is formed of polymer having a high light transmission.

10. The method according to claim 9, wherein the bonding medium layer is formed of polydimethylsiloxane (PDMS).

11. The method according to claim 8, wherein the support layer is made of glass.

12. The method according to claim 8, wherein the cavity into which the waveguide is inserted has a width and a depth substantially same as those of the waveguide.

13. The method according to claim 8, wherein the actuator formed in the silicon layer is a microelectromechanical system (MEMS) actuator which is movable in a horizontal direction depending on an application of a voltage.

14. The method according to claim 13, wherein the MEMS actuator is a comb type actuator.